Nos. 14-1401, -1402

United States Court of Appeals for the Federal Circuit

SAMSUNG ELECTRONICS CORPORATION, LTD.,

Appellant,

v.

CCP SYSTEMS AG,

Cross-Appellant.

Appeal from the United States Patent and Trademark Office, Patent Trial and Appeal Board, Reexamination Control No. 95/001,398.

BRIEF FOR CROSS-APPELLANT CCP SYSTEMS AG

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September 2, 2014

CERTIFICATE OF INTEREST

Counsel for the Cross-Appellant CCP Systems AG certifies the following:

1.   The full name of every party or amicus represented by me is:

CCP Systems AG

2.   The name of the real party in interest (if the party named in the caption is not the real party in interest) represented by me is:

N/A

3.   All parent corporations and any publicly held companies that own 10% or more of the stock of the party or amicus curiae represented by me are:

Greenwich Beteiligungen AG

4.   The names of all law firms and the partners or associates that appeared for the party or amicus now represented by me in the trial court or are expected to appear in this court are:

Morrison & Foerster LLP: Mehran Arjomand; Brian R. Matsui; Jessica E. Palmer

Dated: September 2, 2014   /s/ Mehran Arjomand

TABLE OF CONTENTS

TABLE OF AUTHORITIES

Page(s)

CASES

STATUTES

OTHER AUTHORITIES

STATEMENT OF RELATED CASES

This is an appeal from the final decision of the Patent Trial and Appeal Board ("Board") in the *inter partes* reexamination of U.S. Patent No. 6,684,789 ("'789 patent"). This action has not previously been before this Court or any other appellate court.

Counsel for cross-appellant CCP Systems AG ("CCP") is aware of the following related case pending in the United States District Court for the District of New Jersey: *CCP Systems AG v. Samsung Electronics Corp., Ltd.*, No. 2:09-cv-04354.

Counsel is unaware of any other pending case that will affect or be affected directly by this Court's decision.

JURISDICTIONAL STATEMENT

The Board had jurisdiction under 35 U.S.C. § 134(b). This Court has jurisdiction under 28 U.S.C. § 1295(a)(4)(A) (as amended by the Leahy-Smith America Invents Act, Pub. L. No. 112-29, § 7(c)(2), 125 Stat. 284, 314 (effective Sept. 16, 2011)).

STATEMENT OF ISSUES

CCP's cross-appeal:

Whether the Board erred in rejecting all but two claims of the '789 patent as anticipated or obvious.

a.   Whether the Board erred in dropping "print" from the claim term "print data stream," so it reads on any data stream, and therefore concluding that claims were anticipated or obvious over references unrelated to "print data streams."

b.   Whether the Board erred in concluding that the cited references taught a "parser" for parsing a print data stream, even though they did not disclose parsing a print data stream to identify and separate graphically representable objects, as the claims require.

c.   Whether the Board erred in construing claim 20's "printer" to cover a computer, solely because the computer is connected to a printer.

Samsung's appeal:

1.   Whether substantial evidence supports the Board's conclusions that claims 55 and 63 are not obvious.

2.   Whether the Board correctly refused to sustain the Examiner's rejection of claim 63 as indefinite, where the specification expressly

2

discloses a printer outputting a print data stream, and the Examiner's

rejection was based on the purported absence of such a disclosure.

INTRODUCTION

This appeal arises from the *inter partes* reexamination of CCP's '789 patent,

which is directed to the field of computer printing.

CCP's cross-appeal: In rejecting various claims of the '789 patent, the

Board repeatedly ignored the object of the invention set forth in the claims and the

specification—the transformation of print data *after* it leaves the computer for

printing. Before the '789 patent, printers simply printed whatever print data the

computer sent. Unlike the prior art, the inventive method allows the document to

be printed—the print data—to be transformed *after* the computer has already

output it for printing. To this end, devices using the claimed method (e.g.,

"intelligent printers") can modify documents independent of the computer, thereby

leaving the computer and its user free to do other tasks.

Under the guise of the broadest reasonable construction, the Board robbed

the invention of its stated purpose and meaning. Even though the invention is

directed to the transformation of a "*print* data stream," the Board and Examiner

construed "print data stream" to read on virtually *any* data stream, even if that data

stream was not yet ready or not meant to be printed on a printer. The Board and

the Examiner also deprived "printer" of any meaning, by construing that term to

include a general-purpose computer, merely because it was connected to an external printer.

Not surprisingly, these overbroad constructions infected the entire reexamination and require the Board's anticipation and obviousness rejections to be set aside. Based on its construction of "print data stream," the Board concluded that a document editing system invalidated the invention because that prior art allows for the transformation of a *document* file stream (which is used to modify and view a document at a computer) before the document is formatted for printing or sent to a printer. And based on its construction of "printer," the Board held that a general purpose computer when connected to a printer invalidated the claims, even though the very purpose of the invention is to shift work *from* such computers *to* connected devices such as intelligent printers. But for the Board's legal error, CCP's claims should have been sustained.

Samsung's appeal: As to its own appeal, Samsung argues there was no substantial evidence supporting the Board's decision to uphold certain claims. But here, the Board committed no error. Substantial evidence supports the Board's finding that certain claims were not obvious, because the prior art did not disclose a key limitation of the claims: sending emails via a script. And Samsung's indefiniteness argument fails because the specification discloses everything the challenged claim requires.

4

STATEMENT OF THE CASE

A.   The '789 Patent

1.   *Context of the invention*

In 2001, when the '789 patent was filed, desktop computers had significantly less memory and processing power than today. A64. When someone wanted to print a large, graphic-intensive business document, there often was a delay resulting from the slow and congested connection between the user's desktop computer and the networked printer. Network congestion was a particular concern for businesses, because printing letters or invoices containing complicated graphical elements (such as letterhead, logos, graphics, or tables) often required transmitting a large volume of data from a number of desktop computers to a number of networked printers. A66(col.1:6-27). Thus, at the time of the invention, users, particularly business users, needed more computer processing power available to them and also needed to reduce the volume of data being transmitted over the network. A66(col.1:17-42; col.2:21-51).

In addressing this problem, the '789 patent recognized that newer printers and copiers were smarter—i.e., they possessed enhanced processing power—but were underutilized for two reasons. A66(col.1:17-21; col.2:44-48). First, they typically sat idle—their processing power was not used unless and until a document was actually printed. A66(col.2:42-61). Second, although the printers

were smarter, *how* documents were printed had not changed in a decade: users still used desktop computer applications, such as word processing programs, to prepare memory-intensive business documents, and then output those documents in print-ready form to a networked printer. A66(col.1:9-16; col.2:49-61). While some printers could place incoming print data into electronic forms stored on the printer, those stored forms were not compatible with all printers. A66(col.1:17-42). This resulted in printing errors (for example, the line and page breaks in a given computer document might not match the form stored on the selected printer). Because smart printers could only dumbly accept incoming print data, these errors could not be corrected.

The '789 patent created a way to use the smarter but underutilized printers to alleviate the need for increased computer processing power and to reduce network congestion. The invention did so by teaching a software-based method of transforming print data *after* it has been output from the user's computer and sent to the printer for printing. A66(col.1:6-8); A69-A70(col.8:55-col.9:23); A65 (Fig. 1). In other words, instead of preparing print data solely at the user's computer, the data can undergo modification even after it has left the computer. This software-based method (called "JScribe®") accepts print data output by any computer, in a wide variety of formats, and modifies and reformats the data for printing on any printing device. A68(col.5:38-59).

6

When installed on a printer, JScribe® can process incoming print data, identify the elements in it (like graphics, body text, or tables), and modify and reformat those elements as necessary, without user intervention.   A68-A70(col.5:11-59; col.8:55-col.9:14).   JScribe® can retrieve information from a networked source (such as the Internet or e-mail), and automatically generate content like graphs for inclusion in the printed document.   A68(col.5:11-41; col.6:21-51).   By relocating these functions from the user's computer to a downstream device, JScribe® frees the computer (and its user) for other tasks, solves printer compatibility problems, and reduces the amount of data flowing through a network.   A67-A68(col.4:25-31; col.5:38-col.6:51); A1206-A1211 at A1207-A1208 (Samsung White Paper).   JScribe®'s benefits represent a significant, multifaceted advance over the prior art, and the JScribe® software quickly was licensed by several major technology companies, including IBM and Samsung. A1184-A1188 (Roland Widuch, CCP's CEO).

2.   *The inventive method*

The specification teaches that "the entire printing process [was] controlled and monitored by a host computer" before the '789 patent. A66(col.2:57-61). A user would open a document in an application program on a host computer, and then work on the document (e.g., adding or modifying text and figures). A66(col.1:9-16). When the user was ready to print the document, the application

would activate a printer driver that would prepare the document for printing. A3-A4; A66(col.1:9-16). The printer driver would convert the information in the document, including the text and figures, into a "page description language" able to control the selected printing device (such as a printer or digital copier). A3-A4; A66(col.1:9-16; col.2:52-61), A69(col.7:63-67; col.8:31-34). Different page description languages of various complexity and formats were suitable for use with different types of printing devices. A66-A67(col.1:9-16; col.1:43-54; col.1:60-64; col.2:52-55; col.2:62-col.3:4). After the information had been converted to a suitable page description language, including both formatted information and commands required for printing, the resulting print data stream would be output from the host computer and input to the printing device. A66(col.1:11-16).

The '789 patent picks up where the above process leaves off: with a print data stream that has already been converted to a page description language and output by a host computer. A66-A67(col.1:9-16; col.2:52-col.3:30), A69-A70(col.8:55-col.9:14).

8

The details of the invention are illustrated in Figure 1 of the '789 patent, which depicts an exemplary embodiment:
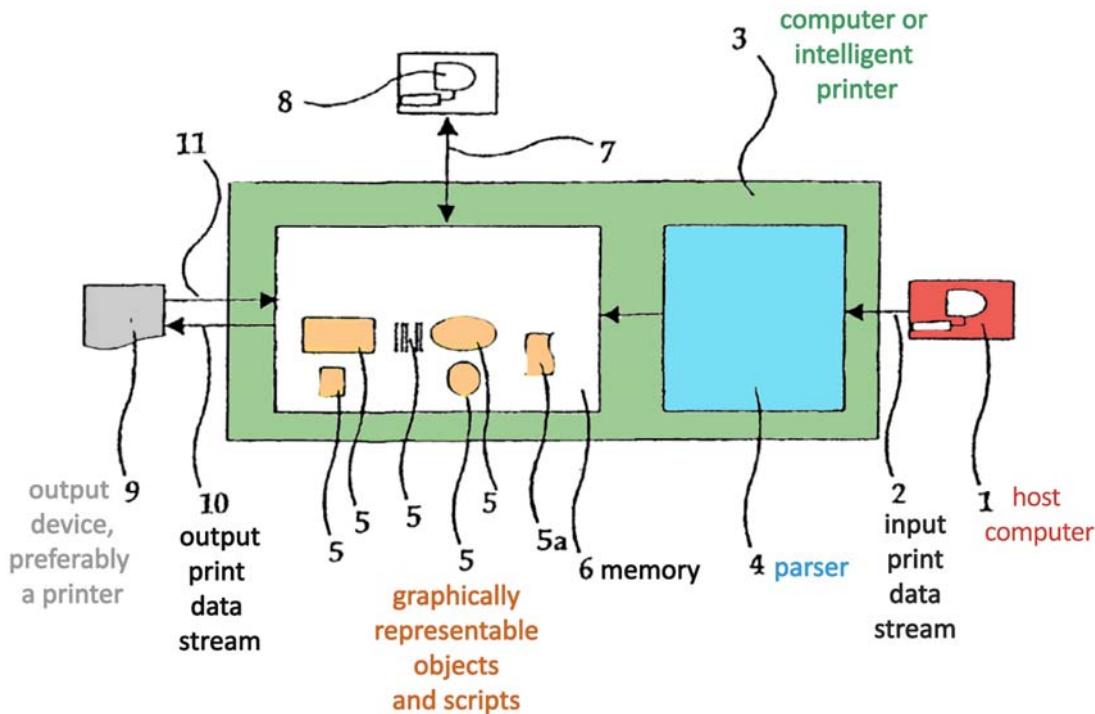
A65 (color and annotations added), A69-A70(col.8:49-col.9:23). At the right, a host computer **1** employs a printer driver to produce a print data stream **2**. A66(col.1:9-16), A69(col.8:57-61). The print data stream **2** is referred to as an "input print data stream" that is input into device **3**, which performs the claimed transformation. A69(col.8:57-61). Device **3** can be another computer, a printer server, or a print-capable output device such as an "intelligent printer." A69(col.8:57-61). For example, device **3** might be an intelligent printer equipped with the software product JScribe®, which embodies the inventive method.

9

A68(col.5:55-59); A1468-A1469 (Declaration of Christoph Picht, CCP's Director

of Business Development).

After device **3** accepts the incoming print data stream **2**, the parser **4**

analyzes the print data stream for "graphically representable objects" **5,** such as

text and images. A66-A67(col.1:13-16; col.3:5-25). The parser splits the print

data up into these objects, which are then stored in memory **6** in an object-oriented

format. A69(col.8:61-66), A67(col.3:21-26; col.4:32-38); A1474 (Declaration of

Dr. David Birnbaum, CCP's expert).[1] For example, if certain document text relates

to sales data, JScribe® can parse the input print data stream **2** to identify the sales

data text, and then store the sales data text as an object **5** in the intelligent printer's

memory **6** for further transformation. A68(col.5:11-18).

Next, the invention transforms the stored objects, for example, by assigning

a "script" to an object. A script is a program or series of commands that is

interpreted and runs in real time (shown in Figure 1 as **5a** in memory **6**). A1477,

A1526 (Birnbaum). At least one such script is assigned to at least one stored

object. A68(col.6:6-20). The script can perform various operations, including (but

not limited to) manipulating, substituting or merging objects, controlling "external

devices" (non-printing devices, such as printer-attached staplers or archiving

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[1] An "object-oriented format" is a format in which objects are organized in
hierarchical classes, with objects of lower classes inheriting properties and
methods of the classes from which they descend. A1477 (Birnbaum); A2178.

devices), receiving emails, or obtaining data from the Internet. A68(col.5:3-18; col.6:6-20). Scripts can also run automatically. A68(col.5:19-20; col.6:21-65).

Finally, the parsed graphically representable objects to which at least one script has been applied (e.g., sales data modified with additional data retrieved from the Internet) are transformed into a format appropriate for controlling an output device (e.g., a page description language), combined into an output print data stream **10**, and output to device **9**. A70(col.9:9-14; col.9:34-39), A65. Output device **9** is preferably a printer, but may be another print-capable device, such as a digital copier. A69-A70(col.7:63-67; col.8:29-col.9:37).

The capacity to assign and execute scripts *after* the print data stream has been output from the host computer, as shown in Figure 1, has numerous advantages. These include freeing the host computer and its user for other tasks and reducing network congestion. For example, the sales data text mentioned above can be assigned a script that will automatically retrieve additional sales-related data from the Internet and insert the additional data prior to printing, without any involvement of the host computer. A68(col.5:11-18; col.6:38-51). And the objects can be modified and formatted in various ways prior to printing, for example, by graphing the sales data. A68(col.5:38-41; col.6:38-46).

As the patent explains, an intelligent printer with JScribe® installed can "independently undertake demanding tasks in information processing and

11

provision, in order to relieve host computers and personal computers of quite a lot of administrative tasks." A68(col.5:44-47); *see* A68(col.6:31-37). For example, the user does not have to obtain updated data from the Internet, insert the data into the document, then prepare the document for printing; all of that can take place at the intelligent printer downstream of the user's computer. A68(col.5:44-47; col.6:21-37). Additionally, JScribe® can "solve[] . . . compatibility issues" by "recogniz[ing] incoming print data and, if required, modify[ing] the print sequences" prior to printing; it can "customize" printer functionality; it can "monitor incoming network requests or print data," etc. A1207-A1208.

CCP's JScribe® software has won industry awards, has been licensed by Samsung through IBM, and has enabled Samsung to develop more advanced multifunctional printers. A1468-A1470; A1184-A1187. As explained in a Samsung White Paper, user demand "for document features such as color printing, scanning, storage, tracking, and security, along with the needs of IT departments … have driven the development of complex multifunctional printers (MFPs) by Samsung." A1206. But "the complex embedded software that must be developed to support all of these multiple functions and features" was an "obstacle" to developing such printers. A1206. "JScribe is Samsung's solution to this obstacle." A1206.

12

Even after Samsung requested this reexamination, Samsung's website continued to promote the advantages of "'JScribe technology,'" stating that "'[a]s printers have gone from only printing to complicated multi-function machines, Samsung has provided JScribe software to support all the new functions and features.'" A1187 (quoting A1213).

3.   The '789 patent's claims

Prior to reexamination, the '789 patent contained 53 claims. A70-A72; A3. New claims 54-82 were added during reexamination. A3; A1332-A1336.

For purposes of this cross-appeal, there are two exemplary claims: claim 1 and claim 20. Claim 1 recites "[a] method for the transformation of digital print data streams" with reference to the steps illustrated in Figure 1:

> 1.   A method for the transformation of digital print data streams, in which
>
> (i) an input print data stream (2) is read in,
>
> (ii) this is analyzed by means of a parser (4) for graphically representable objects (5) and is split up into these graphically representable objects (5), and
>
> (iii) the graphically representable objects (5) are stored in a memory (6) in an object-oriented format, and
>
> (iv) the graphically representable objects (5) stored in the memory (6) in an object-oriented format are transformed into a format for the control of an output device (9), preferably a printer, and
>
> (v) the objects thus transformed are combined into an output print data stream (10) and are output,

13

> characterized in that graphically representable objects (5, 5*a*) are stored in the memory (6) in an object-oriented format, to which at least one stored script is assigned, which is executed in the cases defined in the script.

A70(col.9:25-43); *see* A65.

Claim 20, which is based on claim 17, specifies that the transformation of the print data stream is performed at a printer:

> 17.   A system for the transformation of digital print data streams comprising at least one data processing unit having at least one memory and at least one communications interface, characterized in that the data processing unit is programmed in such a way that it operates in accordance with the method as claimed claim 1.

> 20.   A printer, characterized in that it has a system for the transformation of digital print data streams as claimed in claim 17.

A70-A71(col.10:57-62; col.11:13-15).   In other words, claim 20 recites an intelligent printer that acts as device **3** in exemplary Figure 1. A65; A69(col.8:57-61).

The additional claims recite further aspects of methods, systems, and printers for performing the transformation of print data streams as recited in claim 1. Of relevance to Samsung's appeal, new claims 55, 63, 67, and 75 require a device that assigns a script to an object, and is programmed or adapted "to send and receive e-mails in the cases defined in the script." A1332-A1334, A1336.

14

Claim 63, which depends from claim 59, requires a "printer" that "is further

adapted to send and receive e-mails in the cases defined in the script." A1333.

Emails sent or received by the assigned scripts may be used to transmit data (such

as sales data retrieved from the Internet) for incorporation into a printed document.

A68(col.5:11-31).

B.   The Prior Art

1.   The Interleaf references

The Interleaf article ("Interleaf") and Interleaf patent teach the creation and

editing of a so-called "active document" on a computer workstation. A643-A655

at A643-A644; A656-A667 at A656, A663(col.2:10-43) (U.S. Patent No.

5,579,519).[2] Active documents can include clickable buttons that provide a user-

friendly interface. For instance, active documents may be used in a proofreading

application that lets users "check spelling, punctuation, and grammar" via dialog

windows displayed on a screen, A649-A650, or in an electronic "repair manual

that shows an on-screen video" when a button is pressed, A665-A667(col.6:57-

col.9:26).

Interleaf "active documents" consist of objects to which scripts can be

assigned. A645 ("Lisp scripts can be attached to any Interleaf object . . . ."). A

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[2] It is undisputed that the Interleaf patent discloses the same document
editing system as Interleaf. Samsung Br. 11. Accordingly, arguments regarding
Interleaf also apply to the Interleaf patent and *vice versa*.

user at a computer workstation "enters text or graphics into the active document by using the built-in editor for such objects," and then associates scripts with the objects. A652, A644-A645; A663(col.2:10-43). The active objects "become activated when the document is opened programmatically or by the user for viewing, editing, or printing." A652.

An Interleaf active document, like other electronic documents, may be converted for printing to a page description language, output as a print data stream, and printed. A648, A650; A1485 (Birnbaum). However, the Interleaf references do not discuss converting a document into a print data stream, much less transforming a print data stream. A1482-A1485 (Birnbaum). Indeed, the Interleaf references do not even disclose a printer. A17.

The only data stream discussed in Interleaf or the Interleaf patent is a "document file stream." A1484-A1485 (Birnbaum). This document file stream is formed when a computer opens a document and associated files, such as a "methods" file or back-up file. A652. But this file stream is not in a format for output to a printer. To be printed, it first needs to be converted into a print data stream by a printer driver. A1485 (Birnbaum). Because the Interleaf references do not discuss the production, transformation, or printing of a print data stream, "the ['789 patent's] technology takes over where the Interleaf system ends." A1484 (Birnbaum).

16

2.   *Other references*

a.   IBM's AS/400 is a midrange computer system that typically has multiple users and connected printers. A1472 (Birnbaum). The IBM reference ("IBM") is a 414-page user manual describing ways to use the AS/400 system's printing subsystem, or Advanced Function Presentation ("AFP"). A1472 (Birnbaum); A223, A225. This subsystem receives data from an application running on the AS/400 (text, images, etc.) and formats the application data for printing on a specified printer.

The portions of IBM on which the Examiner and Board relied teach that application data can be formatted by the application itself, or alternatively, unformatted application data can be formatted using "page definitions" and "form definitions." A417-A420; *see* A10-A12; A2190 (quoting A417-A419). IBM's Figure 116 illustrates these two alternative processes: a "traditional" method in which "application formatted" data is sent for printing, and an "external" method of formatting "unformatted" application data, using page/form definitions, before it is sent for printing. A418 (Fig. 116). IBM also teaches that as an alternative to using page/form definitions, unformatted data can be formatted for printing using a Data Description Specification, or "DDS." A235, A237; *see* A2190. Either way, the formatted data is output as a print data stream to an external printer. A418 (Fig. 116), A237.

17

While IBM's page/form definition process may split "unformatted" data (specifically, "input print lines") into "fields," it does not parse a print data stream formatted for the control of a printer. A418; A70(col.9:27-30). Indeed, IBM explains that the "unformatted" lines of data are formatted using page/form definitions *before* sending the data for printing. A418 (Fig. 116), A417-A420 (comparing "application formatted" output for printing, with "unformatted" application data that is formatted using page/form definitions prior to printing). In other words, this IBM function does not receive and modify an input print data stream, but rather is used by the AS/400 printing subsystem to *prepare* a print data stream from unformatted data.

b.   U.S. Patent No. 6,678,705 ("'705 patent") is directed to a system for archiving electronic documents. A2036-A2049 at A2036, A2043(col.1:13-15). A user emails a document to the archiving server, and "the deposit of a message in a folder" on the server results in the activation of "a server-side script." A2044(col.3:18-45), A2037 (Fig. 1); A19. The script is then used to process the information in the message; for example, it can extract information, process it, and store it on a physical storage device like a CD. A2044(col.3:45-62).

c.   The Lieberman article ("Lieberman") describes applications using scripts in languages such as JavaScript. A668-A676; A1473 (Birnbaum).

C.   PTO Proceedings

1.   Reexamination

Samsung initiated an *inter partes* reexamination of claims 1-53 of the '789 patent. A41. Samsung proposed nine grounds of rejection, relying primarily on Interleaf, the Interleaf patent, and IBM. A46-A49. After the Examiner issued a non-final office action rejecting the claims, CCP responded and added 29 new claims. A1323-A1527. The Examiner rejected all original and new claims on various grounds. A5-A6; A2163-A2336 at A2164. Relevant here, exemplary claim 1 was rejected as anticipated by Interleaf, and claims 1 and 17 were rejected as obvious in view of Interleaf and the Interleaf patent. A5-A6; A2220-A2221; A1041, A1047. Claims 1, 17, and 20 were rejected as anticipated by IBM, or obvious on various grounds combining Interleaf and/or the Interleaf patent with IBM. A5-A6; A2196, A2202, A2230-A2231; A1024, A1029, A1054.

In rejecting claims 1, 17, and 20—and the other claims, as they incorporate the method of exemplary claim 1—the Examiner made several legal errors. First, the Examiner construed "digital print data stream" to mean "a 'digital' 'data stream' where the stream may be sourced from a 'document' and *may or may not* be output to a 'printer.'" A2311 (emphasis added).[3] This expansive construction reads on virtually *any* data stream (including, for example, a music download).

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[3] It is not disputed that the data streams involved are "digital."

19

Indeed, this construction does not require that the print data stream have anything to do with printing at all. Relying on this construction, the Examiner found that editing text styles, graphic objects, and other teachings applicable to a *document* file stream on a computer, as disclosed in the Interleaf references, disclosed the "transformation of a digital *print* data stream." A2214-A2215 (emphasis added).

The Examiner also concluded that the Interleaf references taught something called "*print*-scripting," even though those references do not disclose a print data stream, the preparation of a print data stream, or even a printer. On that basis, the Examiner concluded it would have been obvious to use "the print-scripting process of Interleaf" to improve upon prior art printing systems. A2204, A2196-A2198, A2232, A2241. But "print-scripting" is not a term of art used by the references (or any other evidence of record). As Dr. Birnbaum explained without testimonial rebuttal, whatever print-scripting might be, there is no "print-scripting process of Interleaf." A1480 (Birnbaum) ("The phrase 'print-scripting process of Interleaf' is unclear and not disclosed in the Interleaf documents.").

Second, the Examiner held that the prior art disclosed "parsing" a print data stream for objects, as required by the claims. A2215, A2190, A2196-A2197. But that is not what the Interleaf Lisp interpreter cited by the Examiner does. The Interleaf Lisp interpreter operates on a document file stream, not a print data stream, and in operation, it merely interprets scripts that are already attached to

20

objects in an Interleaf document. A1485 (Birnbaum). The Lisp interpreter does not parse an input print data stream—or any data stream, not even the Interleaf document file stream—for graphically representable objects and split the objects up for storage prior to assigning them scripts. A1485 (Birnbaum). Nor was the Examiner correct to rely on the cited portions of IBM as disclosing parsing a print data stream for objects. A2190-A2191. The cited passages describe using IBM's page/form definitions to prepare "unformatted" lines of application data for *output* as a print data stream, not parsing an *input* print data stream for objects, as required by the claims. A418 (Fig. 116), A419 (Fig. 117); A1474-A1476 (Birnbaum).

Third, in rejecting exemplary claim 20, which is directed to a printer for performing transformation of a digital print data stream, the Examiner relied on IBM as disclosing such a "printer." A2192-A2193, A2201; A2401-A2406. But the only "printer" the Examiner identified—the AS/400 system—is a general-purpose computer, not a printer. A1478 (Birnbaum). Furthermore, the DDS or page/form definitions that the Examiner relied upon are used by the AS/400's printing subsystem to format unformatted data for printing, not to transform input print data streams. A2190-A2191; A235, A237; A417-A418. Nevertheless, the Examiner concluded that IBM's disclosure of an AS/400 *attached* to an external printer was a "printer" for the transformation of digital print data streams, as required by claim 20. A2192-A2193, A2201; A2405.

21

The Examiner also rejected other claims on various grounds. As relevant here, she rejected claims 55, 63, 67, and 75, which require a device programmed or adapted to "send and receive e-mails in the cases defined in the script," over combinations including the '705 patent. A6; A2238-A2242. And the Examiner rejected claims 59 and 64, and their dependent claims 60-63 and 66-67, as indefinite. A2187; A2399-A2400.[4]

After the Examiner issued a Right of Appeal Notice, A2392-A2442, CCP timely appealed to the Board, A2443-A2444.

2.   *Board decision*

Following an oral hearing, the Board overturned several of the Examiner's grounds for rejection.   A21-A23; A2582-A2612.   The Board reversed the Examiner's finding that the '705 patent disclosed receiving an email via a script and the Examiner's indefiniteness determination that the '789 patent's specification failed to disclose a printer capable of outputting a print data stream. A8, A19, A22. As a result of these reversals, the Board upheld claims 55 and 63. A19, A22-A23. In addition, the Board held that IBM does not anticipate claims 1, 17, and 20, because IBM does not disclose parsing a print data stream for objects that are then assigned scripts. A11-A12; A418 (Fig. 116); A260-A261.

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[4] Cancelled claims 65 and 73, as well as claims 64, 66, 67, 72, 74, and 75, rejected under 35 U.S.C. § 314(a), are no longer at issue. A3, A21; A2396.

Nevertheless, the Board sustained the remaining grounds for rejecting claims

1, 17, and 20. A21-A23.

First, the Board adopted the Examiner's construction of "print data stream"

to include a "data stream" that "may or may not be output to a printer":

> The Examiner construed "digital print data stream" to include on "a 'digital' 'data stream' where the stream may be sourced from a 'document' and may or may not be output to a 'printer.'" ACP 148. The Specification does not define this term and we see no error in the Examiner's reasonable construction.

A12; *see* A2311. The Board acknowledged the testimony of CCP's expert that a

print data stream is only generated from a document file stream after the print

function is activated, and that the Interleaf references never disclose transforming a

print data stream. A13; A1484-A1485 (Birnbaum). But the Board rejected the

possibility that a "document file stream becomes a distinct print data stream" when

the print function is activated. A13. Instead, the Board agreed with the Examiner

that "Interleaf's 'document file stream' falls within the broadest reasonable

interpretation of the claimed 'print data stream.'" A13. The Board also agreed

with the Examiner that since the Interleaf references were purportedly addressed to

print data streams and printing documents, it would have been obvious to use them

to improve upon IBM's prior art printing system. A17-A19.

Second, although the Board recognized that IBM did not anticipate because

it failed to disclose "parsing" a print data stream and assigning scripts to the parsed

objects, the Board agreed with the Examiner that "parsing" was disclosed by Interleaf. A10-A14. Specifically, the Board observed that "the Lisp interpreter operates on the Interleaf document file stream." A14. Applying its expansive construction of "print data stream" to include Interleaf's document file stream, the Board concluded that "Interleaf discloses parsing of a print data stream." A14.

Finally, although the Board rejected the Examiner's finding that Interleaf disclosed a "printer" that is able to perform the claimed transformation, as required by claim 20, the Board agreed with the Examiner that the "printer" requirement is met by IBM's AS/400 computer when connected to an external printer. A16-A17. The Board rejected CCP's argument that the AS/400 is not a "printer," but is merely *attached* to one or more separate, downstream printers: "Appellant has not directed us to persuasive evidence in the Specification that would limit the recited printer to a single chassis." A17.

Both Samsung and CCP appealed.

SUMMARY OF ARGUMENT

CCP's Cross-Appeal. All the Board's anticipation and obviousness rulings should be reversed, because they are based on erroneous claim constructions. The Board and Examiner incorrectly construed "print data stream" to read on *any* data stream, regardless of whether or not the computer has formatted and sent it for printing. Not only does this construction read "print" out of "print data stream" in

24

the claims, it cannot be reconciled with the written description. The written description teaches that invention's entire purpose is transforming data *after* it is formatted as a print data stream—something prior art printing methods could not do. By erasing the difference between "print data streams" and other data streams, the Board ignored this crucial distinction.

This erroneous construction of "print data stream" infected the entire reexamination. Relying on this construction, the Board sustained the rejections of the claims as invalid over the Interleaf document editing system. But the Interleaf references do not address "print data streams," much less teach how to transform them. Interleaf only discusses a "*document* file stream," the transformation of which would modify a document *before* it is formatted as a print data stream for printing. But the Board brushed this deficiency aside, stating that "document file stream" was encompassed in its broad construction of "print data stream."

Nor, under a correct construction of "print data stream," are the claims obvious over the Interleaf references combined with IBM—there would have been no motivation to use Interleaf's teachings, which are not directed to printing, to improve a printing system like IBM's absent improper hindsight. The cited parts of IBM also do not transform print data streams; they involve *creating* print data streams from unformatted data and sending them to printers. Thus, there would

have been no reason to combine these references in order to transform an already-existing "print data stream."

The Board compounded its error in two additional ways. In concluding that the Interleaf references taught "parsing" a "print data stream," the Board ignored that the claims require the "parser" to identify and separate objects from a print data stream. The Interleaf script interpreter cited by the Board cannot identify and separate objects from *any* data stream, much less a print data stream. Nor was "parsing" taught by IBM in the cited passages relied upon by the Board; those passages addressed formatting data in order to prepare a print data stream, not parsing an existing print data stream for objects. The absence of "parsing" from the cited prior art is independently sufficient to reverse all the claims.

Finally, in sustaining the rejection of claim 20, the Board once again read "print" out of the invention. It construed "printer" to include a general-purpose computer, merely because that computer is connected to an external printer. But connecting a general-purpose computer to a printer does not somehow convert the computer into a printer. Indeed, the invention's stated purpose of shifting data processing *from* computers *to* connected devices like intelligent printers would be lost if a "printer" includes a connected computer.

Samsung's Appeal. Samsung argues there was no substantial evidence supporting the Board's decision to uphold claims 55 and 63. But here, the Board

committed no error. The Board correctly reversed the Examiner's rejection of these claims because the prior art fails to disclose a key claim limitation: sending emails via a script. That conclusion was supported by substantial evidence. Nowhere does the prior art disclose sending emails via a script. Similarly, Samsung's indefiniteness argument fails because the specification discloses a printer outputting a print data stream, just as the challenged claim requires. Because the Examiner's rejection of claim 63 was based on the purported absence of that disclosure, the Board's decision was correct.

STANDARD OF REVIEW

This Court reviews the Board's legal conclusions de novo and its factual findings for substantial evidence. *In re Kotzab*, 217 F.3d 1365, 1369 (Fed. Cir. 2000). "Although the PTO gives claims the broadest reasonable interpretation consistent with the written description, claim construction by the PTO is a question of law that [this Court] review[s] *de novo*, just as [the Court] review[s] claim construction by a district court." *In re Baker Hughes Inc.*, 215 F.3d 1297, 1301 (Fed. Cir. 2000) (citations omitted).

Anticipation is a question of fact requiring that every claim limitation be disclosed in a single, enabled prior art reference. *Transclean Corp. v. Bridgewood Servs., Inc.*, 290 F.3d 1364, 1370 (Fed. Cir. 2002). Obviousness is a legal

conclusion based on underlying facts. *Leo Pharm. Prods., Ltd. v. Rea*, 726 F.3d 1346, 1353 (Fed. Cir. 2013).

ARGUMENT

CCP'S CROSS-APPEAL

Even though the entire object of the invention is related to computer printing, the Board committed several legal errors in construing the claims by reading "print" or "printer" out of the invention. Once those legal errors are set aside, the Board's rejection of claims 1, 17, and 20 as anticipated or obvious should be reversed. As the claim limitations affected by the Board's legal errors are likewise required by claims 2-16, 18, 19, 21-54, 56-62, 68-71, and 76-82, the rejection of those claims should be set aside as well.

I.   THE BOARD'S HOLDINGS ON ANTICIPATION AND OBVIOUSNESS SHOULD BE REVERSED BECAUSE THE BOARD MISCONSTRUED "PRINT DATA STREAM"

The Board, like the Examiner, construed "print data stream" to include a "data stream" that "may be sourced from a 'document' and *may or may not* be output to a 'printer.'" A12 (emphasis added). But this construction cannot be reasonable; it drops the word "print" entirely from the term "print data stream." To be correct, a "print data stream" must at least require a data stream that is output in a format for controlling a printer (even if printing does not ultimately occur).

Once the Board's construction is set aside, the Board's rejections of claims

1, 17 and 20 should be reversed. A12-A14. Because Interleaf's "document file

stream" is not an output in a format for controlling a printer, the Interleaf

references do not teach the transformation of a "print data stream" within the

meaning of the '789 patent, nor would there be any reason to combine the Interleaf

references with IBM. As all the claims require the transformation of a "print data

stream," and all the Board's rejections relied on Interleaf or the Interleaf patent,

this legal error warrants the reversal of all the anticipation and obviousness

rejections.[5]

A.   The Broadest Reasonable Construction Does Not Permit The Board To Ignore Or Read Out Claim Limitations

Although the Board gives a claim its broadest reasonable construction, a

reasonable construction must be supported by and consistent with the specification.

In re Saether, 492 F.2d 849, 852 (CCPA 1974). This Court has held that "[t]he

protocol of giving claims their broadest reasonable interpretation during

examination does not include giving claims a legally incorrect interpretation." *In*

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[5] Specifically, the Court should also reverse the rejections of claims 2, 4-7, 11, 12, 22-23, 25-28, 32, 33, 38, 39, 41-44, 48, and 49 as anticipated by Interleaf, A14, A22; the rejections of claims 2, 4-14, 16, 18, 22, 23, 25-35, 37-39, 41-51, 53-54, 57, 61, 68, 70, and 76-82 as obvious over the two Interleaf references, A14, A22; and the rejections of claims 2-16, 18, 19, 21-54, 56-62, 68-71, and 76-82 on various grounds combining the Interleaf references with IBM (and/or Lieberman), A21-A22.

re Skvorecz, 580 F.3d 1262, 1267 (Fed. Cir. 2009); *see Rowe v. Dror*, 112 F.3d 473, 480 (Fed. Cir. 1997) (the broadest reasonable construction "does not relieve the PTO of its essential task of examining the entire patent disclosure to discern the meaning of claim words and phrases"). And this Court's predecessor explained that "[i]t is axiomatic that not only must claims be given their broadest reasonable interpretation consistent with the specification, but also that all limitations must be considered." *In re Saether*, 492 F.2d at 852. In other words, a claim must be "interpreted with an eye toward giving effect to all terms in the claim." *Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 950 (Fed. Cir. 2006); *Unique Concepts, Inc. v. Brown*, 939 F.2d 1558, 1562 (Fed. Cir. 1991) ("All the limitations of a claim must be considered meaningful . . . .").

Consistent with this bedrock principle of claim construction, this Court has repeatedly rejected constructions that do not give weight to the express claim language—notwithstanding the Board's protocol of giving a claim its broadest reasonable construction. In *In re Suitco Surface, Inc.*, 603 F.3d 1255 (Fed. Cir. 2010), for instance, the claim at issue in the reexamination recited a "material for finishing the top surface of the floor." *Id.* at 1260. The claim was directed to floor finishing material for athletic courts and bowling lanes. This Court held that the Board's construction, which "allow[ed] the finishing material to fall anywhere above the surface being finished regardless of whether it actually 'finishes' the

surface," improperly read "finishing" out of the claim. *Id.* The Board explained

that "[a] material cannot be finishing any surface unless it is the final layer on that

surface. Otherwise, the material would not be 'finishing' the surface in any

meaningful sense of the word." *Id.* Under the Board's overly broad construction,

"a prior art reference with carpet on top of wood, on top of tile, on top of concrete,

on top of a thin adhesive plastic sheet anticipates the claims in question because an

adhesive plastic sheet falls at some point in the chain of layers. This construction

does not reasonably reflect the plain language and disclosure of the . . . patent." *Id.*

Thus, the Court explained that the broadest reasonable construction "does not give

the PTO an unfettered license to interpret claims to embrace anything remotely

related to the claimed invention." *Id.*; *see In re NTP, Inc.*, 654 F.3d 1279, 1288

(Fed. Cir. 2011) ("While the Board must give the terms their broadest reasonable

construction, the construction cannot be divorced from the specification and the

record evidence.").

Similarly, in *Apple Computer, Inc. v. Articulate Systems, Inc.*, 234 F.3d 14,

24-25 (Fed. Cir. 2000), this Court reversed the district court's construction of the

claim limitation "help access window." The patent in that case was directed to a

method of displaying computer data on a computer screen in a number of

simultaneously active windows. The district court construed "*help* access

window" to be "a window that contains one or more controls for accessing

information which has been loaded on the central processing unit ('CPU')." *Id.* at 19 (emphasis added). The Court reversed, and held that the district court's "interpretation of 'help access window' was so broad as to read the 'help' limitation out of the claim." *Id.* at 24. Viewing the claim as a whole, the Court concluded that "the claimed window is not intended to access just any information on the CPU; it is intended to access help information." *Id.* at 25. Thus, the district court's construction did not interpret that claim "in light of the teachings of the written description and purpose of the invention described therein." *Id.* at 25.

So too here. In construing "print data stream" to mean any "data stream," including a data stream on a host computer that is not yet formatted for controlling a printer, the Board read the "print" limitation out of the claims. That cannot be correct. It is contrary to the purpose of the '789 patent, which is directed to manipulating a "print data stream" *after* it has been output from a desktop computer in a format for controlling a printer (i.e., a page description language). A69(col.8:55-61) ("From a computer **1**, an input print data stream **2** is sent to a device **3**."); A66-A67(col.2:42-col.3:4). The word "print" signifies that the "print data stream" has been prepared for controlling a printer. By allowing manipulation of this data *after* the data has been formatted as a "print data stream," the invention takes advantage of the improved processing power of printers, mitigates the underutilization of printers, frees the user's computer from performing memory

and processor intensive tasks, and reduces network congestion. A66-A68(col.2:42-col.3:4; col.5:44-47).

None of this was possible in the prior art. Before the invention, the host computer converted a document into a page description language for controlling a printer to print the document. A66(col.1:9-16; col.1:43-54; col.1:60-64; col.2:52-66). The converted print data stream was then output from the host computer and received by a printing device. A66(col.1:9-16). There was no manipulation or transformation of the data *after* it left the host computer for the printer. A66(col.2:52-61) ("[T]he entire printing process is controlled and monitored by a host computer."). As a general matter, what left the desktop after a user hit "print" was all that was printed on the paper.

Thus, construing "print data stream" to include any "data stream" robs the invention of its purpose. After all, prior art computers could already manipulate a "data stream" in various ways, including formatting it for printing, *before* it left the computer. A66(col.2:52-61). But the '789 patent reduced the computer's burden by shifting some of these memory- and processor-intensive tasks to modern printers. A66(col.2:57-61), A68(col.5:44-47). Consistent with the invention's purpose, the word "print" in "print data stream" indicates that the data stream described in the '789 patent is a specific kind of data stream, not a general one— i.e., it is a data stream that is formatted for the control of a printer. It is *that* data

33

stream—the print data stream—which is transformed by the invention. And the claim language "print data stream" must be construed in light of "the teachings of the written description and purpose of the invention described therein." *Apple Computer*, 234 F.3d at 25.

Moreover, other aspects of the specification confirm that a "print data stream" cannot be just any "data stream." The specification consistently describes "print data streams" as having undergone conversion to a print-ready format, or "page description language," formatted for the control of a printer. A66-A67(col.1:9-11; col.1:43-54; col.1:60-64; col.2:52-53; col.3:21-26; col.3:54-57); A66(col.2:52-66) (explaining that in order to print, computers must first convert information "into the page description language 'understood' by the printing system," and "[i]t is therefore an object of the present invention to specify a method for the transformation of digital print data streams which is . . . capable of recognizing more complex page description languages"). Specifically, the computer uses a printer driver to "convert[] information about the graphic objects to be output—for example text or image information—into the respective PDL suitable for the printer used, so that the latter can hereby be controlled directly." A66(col.1:13-16); A66(col.2:57-61) (explaining that the host computer "convert[s] the respective information exactly into the page description language 'understood' by the printing system."). And the specification teaches that the invention can

34

recognize and transform data formatted in these page description languages—i.e.,

it can recognize and transform "print data streams": "It is therefore an object of

the present invention to specify a method for the transformation of digital print

data streams which is . . . capable of recognizing more complex page description

languages." A66(col.2:62-66).

Finally, "print data stream" is consistently described as data output from one

device (usually a computer) and input to another device (usually a printer).

Nowhere is it used to mean *any* data on a computer (including, for example, a

document that has not yet been sent for printing). A69-A70(col.8:55-col.9:23;

col.9:25-43).

35

Thus, Figure 1, shown below in relevant part, shows a host computer **1** outputting a print data stream **2**:
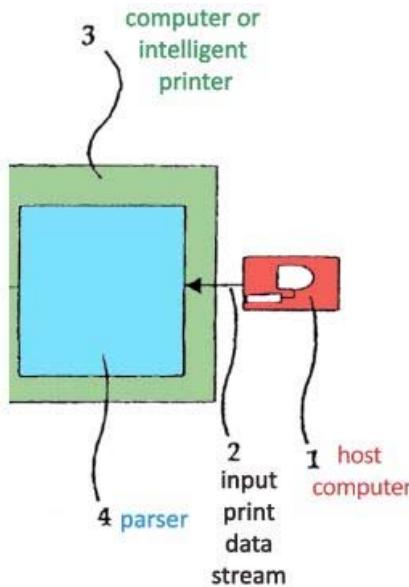
A65 (color and annotations added), A69(col.8:57-58). Print data stream **2** is depicted as an arrow sent from computer **1** to device **3** (e.g., an intelligent printer). From device **3**'s perspective, the print data stream is an "input" print data stream. A69(col.8:57-58) ("From a computer **1**, an input print data stream **2** is sent to a device **3**."); A64-A65, A70(col.9:27). There is no suggestion anywhere in the patent that the claimed transformation can take place *on* computer **1**, or that data not yet output by the computer represents a transformable "print data stream" within the meaning of the claims. The Board's construction not only fails to account for these teachings, it contradicts them. *See In re Baker Hughes*, 215 F.3d

36

at 1303; *In re ICON Health & Fitness, Inc.*, 496 F.3d 1374, 1379 (Fed. Cir. 2007);

In re Suitco Surface, 603 F.3d at 1260.

To be sure, the Board did reference the specification, but only to note the absence of an express definition of "print data stream": "The Specification does not define this term and we see no error in the Examiner's reasonable construction." A12. But an express definition is not required. As this Court has explained, "[e]ven when guidance is not provided in explicit definitional format, the specification may define claim terms by implication such that the meaning may be found in or ascertained by a reading of the patent documents." *In re Abbott Diabetes Care Inc.*, 696 F.3d 1142, 1150 (Fed. Cir. 2012) (internal quotation marks omitted).

B. The Examiner's Additional, Uncited Reasoning Cannot Support The Board's Construction

The only intrinsic support offered by the Examiner for her unreasonably broad construction of "print data stream" was based on another limitation in claim 1. The Board did not rely on this limitation in upholding the Examiner's construction of "print data stream." A12. Even if considered, that limitation cannot justify reading "print" out of the claims.

Claim 1 recites the following step: "(iv) the graphically representable objects (5) stored in the memory (6) in an object-oriented format are transformed into a format for the control of an output device (9), preferably a printer." A70(col.9:34-

37). Focusing on "an output device (9), preferably a printer," the Examiner noted

that some output devices are not printers. A2311-A2312. The Examiner then

wrongly concluded that the data need not be formatted for printing, and the "print"

in "print data stream" can be ignored:

> It appears to **Examiner** that a transformed document output (transformed data stream output) to memory or to a device such as an "archiving device" ('789, 5:7) may not actually "print." The specification expressly states ('789, 5:5-10) that the invention permits incorporation **all the devices needed in the widest sense for document processing**."

A2311-A2312 (emphasis added by Examiner).

Of course "an output device (9), preferably a printer" does not limit output

device **9** to only a printer. The specification lists, besides a printer, other species of

print-capable output devices, i.e., digital copying systems, that are encompassed by

the limitation "output device." A69(col.7:63-67). But giving "output device" this

breadth does not negate the recited "print data stream." To the contrary, the

specification teaches that "[v]irtually all the *output devices* which are common

nowadays use 'page description languages', also called PDL, to produce printed

documents." A66(col.1:9-11) (emphasis added). It further teaches that "a driver

for the output device" is used to convert data into a format suitable for printing.

A66(col.1:11-16). Thus, the specification's discussion of "output device"

emphasizes that a "print data stream" is in a format suitable for printing, e.g., a page description language.

The Examiner also incorrectly assumed that an "output device" might instead be a *non-printing* archiving device. A2311-A2312. But this ignores the distinction the '789 patent draws between "output devices" (including printers) and "external devices" (including archiving devices). "Output devices" are devices that "produce printed documents." A66(col.1:9-11). An "external device" performs other, non-printing tasks, like archiving. A68(col.5:3-10).

This difference is confirmed by the claims. Claim 1 specifically refers to "an output device (9), preferably a printer," but claim 4 recites archiving devices, together with other non-printing devices, as examples of "external devices." A70(col.9:34-37; col.9:59-64). By equating "output devices" with "external devices" (specifically, an archiving device), the Examiner improperly ignored language in the claims and specification that differentiated these devices. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005) (en banc) ("Differences among claims can also be a useful guide in understanding the meaning of particular claim terms.").

In any case, even assuming that an archiving device were an "output device" (and it is not), that could not support reading "print" out of "print data stream." At most, it would mean that a print data stream might sometimes be archived, in

39

addition to, or instead of, printed on paper. Thus, the Examiner's additional reasons, which were not even cited by the Board, cannot sustain the Board's overbroad construction of "print data stream."

C. Under The Correct Construction Of "Print Data Stream," The Claims Are Not Anticipated By Interleaf Or Obvious Over The Interleaf References

The Board concluded that Interleaf anticipated the claims on the grounds that Interleaf's "document file stream" is the same as the claimed "print data stream." A12-A13, A22. Specifically, Interleaf discloses that "[i]f a document contains active objects within the document file stream (as opposed to the methods file), these become activated when the document is opened programmatically or by the user for viewing, editing, or printing." A652. In other words, when an Interleaf document is opened, the "document file stream" is read by the computer. This "document file stream" is a collection of active objects, and the objects are activated. A1484-A1485 (Birnbaum).

But under the correct construction of "print data stream," opening an Interleaf document for editing does not involve a print data stream. As Dr. Birnbaum explained:

> Opening an Interleaf document is akin to opening a Word document. However, this operation does not create a print data stream. In the Word analogy, print data are only generated when the print function is activated, e.g., a print icon in Word is clicked.

A1485.[6] Because the document file stream is not capable of being understood by a printer, Interleaf does not meet the "print data stream" limitation recited in the claims, and cannot anticipate. *Rowe*, 112 F.3d at 478 ("[A]bsence from the reference of any claimed element negates anticipation.") (internal quotation marks omitted). For the same reason, the claims cannot be obvious over Interleaf combined with the Interleaf patent, because both references teach the same system, Samsung Br. 11, and that system does not transform a "print data stream."

Nor does it matter that the Interleaf references mention "printing." The Interleaf references at most acknowledge that Interleaf documents, like other electronic documents, *could* be converted to a print-ready format and printed using existing external printing facilities. A650 (noting that an active document application may "take advantage" of the system's "publishing facilities," including "mak[ing] use of the system's printing . . . capabilities"), A648 (same), A652 (a document can be opened for printing); A1480 (Birnbaum). But neither Interleaf reference teaches a method of transforming a "print data stream". A1479-A1480,

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[6] Although the Board stated that "Interleaf's document file stream, which is sourced from an Interleaf document, *may be printed*," A12 (emphasis added), Interleaf never states that the "document file stream" is *already* in a format for control of a printer. At most, Interleaf documents *may be converted into a print-ready form* should the user choose to print them. An Interleaf active document— like other prior art documents, A29(col.1:9-16)—would require conversion to a print-ready format suitable for the chosen printer. A1480 (Birnbaum).

A1484-A1485 (Birnbaum). The Interleaf references do not even disclose a printer. A17.

Moreover, the hypothetical "printing" of an Interleaf document would not teach the required "transformation" of a print data stream. To the contrary, such printing would be indistinguishable from printing in the prior art—a print data stream would be produced by the computer and then output to the printer. Like other prior art electronic documents, Interleaf documents are edited on a computer workstation *before* they are output as a print data stream to a printer. A663(col.1:15-44, col.2:10-42); A1480, A1484-A1487 (Birnbaum). Indeed, Interleaf scripts are activated, and the document modified accordingly, when the document is opened or edited on the computer. A652, A665(col.5:6-35, col.6:32-56); A1484-A1486 (Birnbaum). Thus, a print data stream would not be "transformed" by the processes taught in Interleaf, and Interleaf could not anticipate.

Finally, the Board concluded that Dr. Birnbaum did not provide convincing testimony that an Interleaf document file stream became a distinct "print data stream" upon a user pressing a print button. A13; A1484-A1485, A1480-A1481, A1488 (Birnbaum). But that conclusion also is based on the incorrect construction. Dr. Birnbaum explained that the difference between the Interleaf system and the claims is not merely pressing a button: it is that, on the user's print

42

command, Interleaf data would be sent to the computer's printer driver, converted, and output as a distinct print data stream. A1484-A1485, A1481 (Birnbaum). Dr. Birnbaum's testimony that Interleaf's document file stream is not a print data stream prior to this conversion is consistent with the '789 patent's description of prior art document printing methods, A66(col.1:9-16), and was unrebutted by Samsung's expert, Mr. Jacobs, A2056-A2057 (opining on whether one could use "Interleaf technology with a print data stream (as shown in IBM) *instead of* a document file stream") (emphasis added). Accordingly, the Board erred in its affirming the rejections based on Interleaf alone and in combination with the Interleaf patent.

D.   The Obviousness Rejections Also Should Be Reversed Because There Was No Motivation To Combine The Interleaf References And IBM

The Board's obviousness rejections (all of which relied on Interleaf and/or the Interleaf patent, A5-A6) also were based on the overbroad construction of "print data stream." Once that construction is set aside, there would be no motivation to combine the Interleaf references with IBM to transform a print data stream. As shown above, the Interleaf references provide no indication that their teachings could be used to transform print data streams, or improve printing processes generally.

1.   The Board's obviousness analysis was based on its incorrect construction of "print data stream" and resulting misunderstanding of the Interleaf references

An invention "composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007); *see Eli Lilly & Co. v. Zenith Goldline Pharm., Inc.*, 471 F.3d 1369, 1379 (Fed. Cir. 2006) ("[M]ere identification in the prior art of each component of [an invention] does not show that the combination as a whole lacks the necessary attributes for patentability, i.e. is obvious."). This makes sense because most inventive combinations are combinations of known elements. *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1143 (Fed. Cir. 1985).

To this end, this Court has long held that obviousness requires a prior art motivation or reason why, at the time of the invention, a person of skill in the art would have combined the elements in the manner claimed. *In re Kotzab*, 217 F.3d at 1371; *In re Lee*, 277 F.3d 1338, 1343 (Fed. Cir. 2002); *KSR*, 550 U.S. at 418 ("[I]t can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does."). While the motivation need not be expressly stated in the references, "'rejections on obviousness grounds cannot be sustained by mere conclusory statements; there must be some articulated reasoning with some

rational underpinning to support the legal conclusion of obviousness.'" *KSR*, 550

U.S. at 418 (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)); *see* Manual

of Patent Examining Procedure § 2142 (9th ed. 2014) (under *KSR*, "the key to

supporting any rejection under 35 U.S.C. 103 is the clear articulation of the

reason(s) why the claimed invention would have been obvious"). As the Supreme

Court has explained, "this analysis should be made explicit." *KSR*, 550 U.S. at

418.

In addressing whether it would have been obvious to use the Interleaf

references to improve prior art printing processes like those discussed in IBM, the

only motivation articulated by the Board for the claimed combination was that the

Interleaf references addressed printing, and therefore could be used to improve

other printing references. A17-A19. In so doing, the Board rejected CCP's

argument that the Interleaf references do not teach the transformation of "print data

streams," as "Interleaf's active documents must be converted to inactive

documents before they may be printed," and Interleaf never discusses that process.

A18. Indeed, the Board repeatedly invoked its construction of "print data stream"

in rejecting CCP's arguments that because various Interleaf disclosures were

unrelated to printing, they could not support invalidity. A15 (erroneously

sustaining the rejection of claim 76 over the Interleaf references because "print

data streams encompass the Interleaf's document file stream" and "[f]rames are a

component of that document file stream"), A14 (erroneously concluding that Interleaf taught "parsing of a print data stream" because it taught a "Lisp interpreter operat[ing] on the Interleaf document file stream"), A16 (similar), A13 (similar). Instead, the Board held that "the combination of IBM's printing process and Interleaf Patent's *print*-scripting was a combination of well-known techniques to yield predictable results." A18 (emphasis added); *see* A2237; A2424-A2426.

That was error. It was based entirely on the Board's erroneous construction of "print data stream." Because the Interleaf references have nothing to do with a print data stream or its transformation, the Interleaf references offer no motivation for a person of ordinary skill in the art to combine the cited elements with IBM in order to transform a print data stream. On this basis alone, the Board should be reversed.

Furthermore, the Board was wrong to agree with the Examiner that IBM and the Interleaf references could be combined because Interleaf and the Interleaf patent taught "*print*-scripting." A18 (emphasis added); A2231-A2232. That too flowed from the overbroad construction of "print data stream." There is no such thing as "print-scripting," and it is certainly never disclosed in Interleaf or the Interleaf patent. A1480 (Birnbaum). Rather, these references consistently discuss "scripts" in relation to editing or viewing data on a computer. Only by erroneously conflating the Interleaf document file stream with a print data stream could the

46

Board have concluded that Interleaf taught something called "print-scripting." *In re Chapman*, 595 F.3d 1330, 1339 (Fed. Cir. 2010) (vacating and remanding because "[i]f the Board based its decision on a misunderstanding of [the cited prior art reference], its conclusions regarding obviousness are called into question").[7]

2. Under the correct construction of "print data stream," there was no motivation to make the claimed combination

Under the correct construction of "print data stream," there would have been no motivation to combine the Interleaf references and IBM. This Court has held that combining known elements in a new way to solve a problem not recognized in the prior art is not obvious, where such a combination is only "straightforward in hindsight." *Leo*, 726 F.3d at 1355 (Fed. Cir. 2013). Rather, there must be some reason in the record "for one of ordinary skill in the art to attempt to improve upon [a reference] using [another reference]." *Id.* at 1354. "[I]t is not enough to show that each of the components used by [the patentee] was known, and had been used in other . . . systems." *Interconnect*, 774 F.2d at 1139. In other words, "[t]he ordinary artisan would first have needed to recognize the problem" solved by that combination, and then appreciated that the claimed combination of elements would solve it. *Leo*, 726 F.3d at 1354. That is why "[a] reason for combining disparate

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[7] Likewise, it was only due to its erroneous construction of "print data stream" that the Board could agree with the Examiner that the "documents *produced* by IBM"—i.e., print data streams formatted for printing—"are the same type of documents" taught by Interleaf. A18 (emphasis added); *see* A2232-A2233.

prior art references is a critical component of an obviousness analysis; 'this analysis should be made explicit.'" *InTouch Techs., Inc., v. VGo Commc'ns, Inc.*, 751 F.3d 1327, 1351 (Fed. Cir. 2014) (quoting *KSR*, 550 U.S. at 418).

In *Leo*, for example, the invention—a vitamin D formulation—solved a storage stability problem present in prior art vitamin D formulations. *Leo*, 726 F.3d at 1353. The Board held that the formulation would have been obvious because it merely combined known ingredients already used in prior art formulations. *Id.* at 1351-52. This Court reversed, explaining that there would have been no reason to make this particular combination, unless one were solving the specific problem as described in the patent. *Id.* at 1354-55. "By brushing aside the storage stability issue, the Board erred by collapsing the obviousness analysis into a hindsight-guided combination of elements." *Id.* at 1354.

The same principle applies here. Only through hindsight could the Board and Examiner assume that one of skill in the art would have sought to improve prior art printing processes by transforming a print data stream *after* it was output by a host computer. The prior art printing systems did the opposite: they prepared documents for printing and modified them *before* they were output as a print data stream. Nothing in the record—except the patent itself—indicates that modifying a print data stream in the claimed manner would solve the drawbacks of these prior art printing systems. Moreover, nothing in the record would have pointed a person

toward these specific elements, as opposed to other ways of transforming print data streams.

Indeed, as discussed above, the cited aspects of Interleaf (e.g., object editing and scripting) relate to editing and viewing open documents on a computer workstation, not transforming data sent by the computer for printing. A643; A656, A663(col.1:15-44). As the Examiner conceded, printing and publishing resources were "outside" of, or "external" to, Interleaf. A2197; *see* A648, A650. The mere fact that documents produced by Interleaf's system could be *subsequently* printed, thereby "leverag[ing] outside printing and publishing functionality," A18 (internal quotation marks omitted), does not support the inference that it would be "predictable" to use Interleaf to improve a printing process.

To that end, there would have been no reason for one of skill in the art to combine the Interleaf references and IBM in the claimed manner. Interleaf addresses creating, viewing, and editing electronic documents on a computer workstation, while IBM addresses the *next* step in the process—formatting and printing data sent for printing by a computer application. A1488 (Birnbaum) ("[T]here is no overlap between the Interleaf Patent and IBM."), A1480-A1481 (similar). At most, it might have been predictable to use IBM's printing system to *print* an Interleaf document. A1480-A1481 (Birnbaum). But one of skill in the art would not have thought it "predictable" to use Interleaf's document editing

methods to improve IBM's printing methods, given the references' non-overlapping teachings. A1480-A1481, A1488 (Birnbaum).[8]

Samsung's opening brief, like its reexamination request, juxtaposes snippets from different IBM teachings to argue that IBM suggested a transformation similar to the claimed transformation, and that it would have been obvious to use Interleaf to fill the gaps. Samsung Br. 8-9; A50. But Samsung is wrong. The cited IBM teachings relied upon by the Board do not relate to transforming an input print data stream, when that term is properly construed. A11-A12; A238-A242; A1472-A1473 (Birnbaum). As the Board explained, IBM's page/form definitions and DDS are two ways of preparing *unformatted* application data, or "'formatting data on a page independent of the application program.'" A11 (quoting A261); A417-A420 (explaining application of page/form definitions to format "unformatted" line data prior to sending it for printing); A235 ("An application program creates data to be printed. That output can be formatted in the program (program-described) or externally using DDS."); *see infra* Part II.B (explaining that IBM does not teach

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[8] Although not the basis for the Board's ruling, the Examiner's generic assertion that IBM and Interleaf both address "object-oriented document publishing systems with scripting functionality," A2232, does not explain why it would be obvious to combine these IBM teachings with the Interleaf teachings. Interleaf and IBM do not discuss the same field: they discuss *different phases* of document publishing—document editing vs. document printing. And the cited portions of *neither* reference address using a "scripting functionality" to transform an input print data stream. *See supra* pp. 46-47 (Interleaf references do not disclose "print-scripting").

parsing a print data stream). Rather than suggesting the combination of page/form definitions with DDS, IBM taught that they were "alternative" formatting methods. A10-A12.

Apart from hindsight, there would be no reason to cherrypick the out-of-context cited passages from IBM (a reference which discusses many different prior art methods of printing) to cobble together a so-called method for transforming print data streams that is completely unlike anything in IBM. *Interconnect*, 774 F.2d at 1139 (holding that it "is legal error" to "reconstruct[] the [patented] system, using the blueprint of the [patent's] claims").

II.   REVERSAL ALSO IS REQUIRED BECAUSE THERE IS NO CITED EVIDENCE THAT ANY REFERENCE DISCLOSES PARSING A PRINT DATA STREAM FOR OBJECTS

The Board also erred in holding that exemplary claim 1 was anticipated or obvious because Interleaf disclosed a "parser" that parses a print data stream for graphically representable objects. A14. In addition, the Board's holding that claims 1, 17, and 20 were obvious over the Interleaf references with IBM should be reversed, because the portions of IBM upon which the Board relied likewise fail to disclose parsing a print data stream, much less parsing a print data stream for objects, as the claims require.[9]

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[9] Similarly, this Court should reverse the other anticipation and obviousness rejections. *See supra* p. 29 n.5.

A.   **The Claims Are Not Anticipated Or Obvious Over The Interleaf References Because They Do Not Disclose Parsing A Print Data Stream**

1.   *The Interleaf references do not disclose parsing a "print data stream"*

All the claims, including exemplary claim 1, require a "parser (4) for graphically representable objects" that analyzes a print data stream, identifies objects in the print data stream, and separates the data stream into the identified objects. A70(col.9:25-30), A67(col.3:5-9), A69(col.8:61-65).

The Board and Examiner identified the Interleaf Lisp script interpreter, which interprets scripts in Interleaf active documents, as performing this parsing function. A14; A2214-A2215; A645, A653; A663(col.1:39-43); A665(col.5:1-5). But the Interleaf Lisp interpreter (which is never called a "parser") does not parse a print data stream. Nor could it, as the Interleaf references fail to even disclose a "print data stream," when that claim term is properly construed. *See supra* Part I.C. And the Interleaf Lisp interpreter is only described as interpreting scripts in active documents on a computer—not analyzing *a data stream* that has been prepared and output for printing. A1485 (Birnbaum); A663(col.2:10-60), A665(col.5:1-35). Accordingly, the Lisp interpreter cannot satisfy the "parser" limitation. A1485 (Birnbaum) ("The Lisp interpreter operating on Interleaf does not operate on a print data stream. Thus, even assuming the Lisp interpreter were a parser, it does not parse a print data stream.").

52

Because the Board's conclusion that Interleaf disclosed the required "parser" depended on its erroneous construction of "print data stream," that conclusion must at least be vacated. *In re Chapman*, 595 F.3d at 1339 (vacating and remanding where "the Board based its decision on a misunderstanding of" the prior art reference).

2. *The Lisp interpreter does not perform the claimed parsing function of identifying objects and separating them*

The Board's conclusion that the Interleaf references disclose the claimed "parser" must also be reversed on a second, independent ground. In construing the "parser" limitation to include the Lisp interpreter, the Board erroneously read the parser's *function* out of the claims.

That was legal error. Even assuming that the Lisp interpreter qualifies as a "parser" in the broadest sense (i.e., a syntax analyzer, A67(col.3:23)), the claims require more than a "parser": they require a *specified parsing function*. *InTouch*, 751 F.3d at 1340 (construing "arbitrator" and "arbitrating" limitations to require the type of arbitration described in the claims and written description); *K-2 Corp. v. Salomon S.A.*, 191 F.3d 1356 (Fed. Cir. 1999) (similar); *ACCO Brands, Inc. v. Micro Sec. Devices, Inc.*, 346 F.3d 1075 (Fed. Cir. 2003) (similar). A reasonable construction must give force to all the claim language, including the specified parsing function. *In re Saether*, 492 F.2d at 852.

Here, exemplary claim 1 requires the claimed "parser" to analyze the input print data stream, identify graphically representable objects within that data stream, and split the data stream up to isolate the identified objects. A70(col.9:25-30) ("(i) an input print data stream (2) is read in, (ii) this is analyzed by means of a parser (4) for graphically representable objects (5) and is split up into these graphically representable objects"); A67(col.3:5-9), A69(col.8:61-65). The isolated objects are then stored in memory. A70(col.9:31-43), A69(col.8:61-65) ("[T]he input print data stream **2** is analyzed and split up by a parser **4**. The graphic objects **5, 5a** recognized as the product of this splitting are stored . . . .").

In concluding that the Interleaf Lisp interpreter is the required "parser," the Board ignored these claim requirements. The Lisp interpreter only interprets Lisp scripts, that is, it evaluates instructions written in the Lisp script language. A653; A664-A665(col.3:56-59; col.5:1-35). Neither Interleaf nor the Interleaf patent teaches that the Lisp interpreter performs the recited parsing function, i.e., analyzing a data stream ("print" or otherwise)—much less identifying and isolating graphically representable objects from that data stream. Indeed, Dr. Birnbaum testified that the Lisp interpreter *cannot* perform this function. A1485 ("[T]he Lisp interpreter (by definition) only interprets LISP scripts, and nothing else."). This testimony was unrebutted by Samsung's expert. A2051-A2057 (Jacobs).

It was only because the Board ignored the required functions that it rejected Dr. Birnbaum's testimony. The Board reasoned that because Interleaf disclosed "document file streams," the documents consisted of objects, and the objects had "attached" scripts, the Lisp interpreter that read the scripts was parsing the objects and scripts from the document file stream. A14 (stating that "Interleaf discloses binding the Lisp code and the underlying document data into a single document file stream," and "'Lisp scripts can be attached to any Interleaf object'") (quoting A645); A2215-A2216 (citing A645, A653). But Interleaf never says the Lisp interpreter performs the function of splitting up a document file stream. While the claimed method and the Interleaf references both involve scripts assigned (or "attached") to objects, the claimed parser's function is not to interpret the scripts, but to identify and separate the objects to which the scripts are assigned. Indeed, the claimed "parser" must split the print data stream up into objects *before* those objects can be stored and transformed (e.g., by assigning them scripts). A70(col.9:25-43). A script interpreter, like Interleaf's, would only come into play after the objects have been parsed and scripts are assigned to them. Because the Lisp interpreter does not perform the required parsing function, it cannot be a "parser" under any reasonable construction of the claims.

Because Interleaf does not disclose a "parser" performing the required function of parsing a print data stream for objects, the Board erred in sustaining the

rejections of the claims over the Interleaf references, and that holding should be reversed.

B.   The Claims Are Not Obvious Over The Interleaf References Combined With IBM, Because The Cited IBM "Parsing" Does Not Perform The Claimed Function

In contrast to Interleaf, the Board did not expressly find that IBM discloses a "parser." *Compare* A17-A18, *with* A14 ("Interleaf discloses parsing of a print data stream."). Indeed, in discussing the combination of IBM with Interleaf, the Board did not adopt the Examiner's finding that IBM's "printing process" "parses and transforms a print data stream." A18; A2196-A2197, A2204, A2232. But if the Board had found the claimed parser in IBM, that finding would be wrong.

The Examiner concluded that IBM disclosed a "parser" simply because IBM mentions an optional "pars[ing]" function. A2190, A2196-A2199, A2204, A2232; *see* A418, A437-A439. But IBM's use of the word "parsing" by itself "is insufficient to permit the conclusion that it refers to the same *type* of [parsing] at issue in the [patent]." *InTouch*, 751 F.3d at 1350-51 (emphasis in original). In *InTouch*, this Court reversed an obviousness verdict where the prior art disclosed an "arbitrator," but not the specific arbitration function required by the claims: "there is no evidence, much less substantial evidence, from which the jury could conclude that [the reference] discloses the type of arbitrator claimed." *Id.*

56

The same is true here. IBM's "parsing" is part of a formatting process using page/form definitions. A11-A12 (quoting A261). These page/form definitions can be used to prepare "unformatted" application data for printing, *before* it is output as a print data stream to a printer. A417-A418.[10] Neither IBM's page/form definitions nor the cited IBM "parsing" function are applied to print data streams; they are applied to line data before it is formatted (or output) for printing. A417-A418 (comparing "traditional" application formatting with the use of page/form definitions). Thus, the cited passage of IBM does not disclose "parsing" a print data stream—much less identifying and splitting up graphically representable objects in a print data stream, as the claims require. A1475-A1476 (Birnbaum). IBM's "parsing" cannot support obviousness because it "simply does not describe" the *type* of parsing required by the claims. *InTouch*, 751 F.3d at 1350-51.

For the same reason, it does not matter that other parts of IBM discuss print data streams that are formatted in a page description language, such as PostScript. A15-A16 (quoting A232); A240 (discussing "conversion" of a PostScript data stream "in order to print on an IPDS printer"). The cited "parsing" passage of IBM is not applied to PostScript, or any other, print data streams.

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[10] The Print Services Facility for AS/400 ("PSF/400"), which is a "feature" of the AS/400 operating system, A250, is used to format the data into pages and output a print data stream to the printer, A249, A261, A418.

To the extent the Board adopted the Examiner's conclusion that IBM disclosed a parser (and it does not appear to have done so), at least a remand is required for the Board to apply reasonable constructions of "print data stream" and "parser" to IBM, analyze whether there would have been a reason to combine IBM with the Interleaf references, and articulate the rationale for the obviousness rejections involving IBM.

III. CLAIM 20 IS NOT OBVIOUS BECAUSE THE BOARD INCORRECTLY CONSTRUED "PRINTER" TO COVER A COMPUTER ATTACHED TO A PRINTER

The Board rejected exemplary claim 20 based on its determination that IBM teaches the required "printer" capable of transforming and outputting a print data stream as required by the claims. A16-A17. But the Board only reached this conclusion because it erroneously construed "printer" to cover a computer *attached to* a printer, i.e., IBM's AS/400. A16-A17. In the context of the '789 patent, however, no reasonable construction of claim 20's "printer" can cover a *computer* that prepares and outputs a print data stream to a receiving printer. Correctly construed, "printer" means printing devices only, not other non-printing devices attached to them.

A.   The Board's Construction Of "Printer" Is Not Reasonable

1.   *The specification makes clear that "printer" does not include a connected computer*

As discussed above, even the broadest reasonable construction must be consistent with the claims and specification. *See supra* Part I.A; *In re NTP, Inc.*, 654 F.3d at 1288. In construing "printer," the Board violated this rule. The specification teaches that a "printer" *excludes* computers like IBM's AS/400 that are connected to printers.

First, the specification consistently distinguishes "computers" or "PCs" from "printing systems" (i.e., "printers" or "copiers"). A66(col.2:57-61) ("host computer" controls output to "printing system"); A68(col.5:38-47) (shifting tasks to "printing systems" relieves burden on "host computers and personal computers"); A68(col.6:35-37) (discussing print data stream transformation at a printer, "without the participation of a PC or other host computer to which the printer would be connected"); A65, A69-A70(col.8:49-col.9:23) ("computer" **1** sends a print data stream to device **3** (e.g., an "intelligent printer"), which sends a transformed print data stream to device **9** (preferably a "printer")). This consistent usage is sufficient to define "printer" to exclude a computer attached to a printer. *In re Abbott Diabetes Care*, 696 F.3d at 1150; *Agilent Techs., Inc. v. Affymetrix, Inc.,* 567 F.3d 1366, 1377-78 (Fed. Cir. 2009) (rejecting an "expansive

59

interpretation of 'closed chamber'" to include "a system of enclosures," where "the language of the claim and specification defines the chamber" as "*an* enclosure").

Second, the Board's construction reads on prior art explicitly criticized by the patent. The specification explains that, in the prior art, "the entire printing process [was] controlled and monitored by a host computer," which converted information "into the page description language 'understood' by the printing system" before sending it to the printer. A66(col.2:57-61). The specification disparages this arrangement because host computers were burdened with the memory- and processor-intensive tasks associated with preparing a print data stream for large graphic-intensive documents, intelligent printers were left idle, and the connection between computers and printers was congested. A66(col.1:9-54, col.2:42-61). The invention solves this problem by enabling printers to transform and output print data streams, independent of the host computer. A65, A69-A70(col.8:49-col.9:23) (describing the inventive method). But the Board's construction of "printer" includes the very prior art arrangement the patent disparages—a computer preparing and sending a print data stream to a passive printer. That cannot be correct, as it "leads to an overall result that departs significantly from the patented invention." *On Demand Mach. Corp. v. Ingram Indus., Inc.*, 442 F.3d 1331, 1344 (Fed. Cir. 2006).

Third, the Board's construction eliminates the benefits ascribed to the invention in the specification, which explains that "printing systems" using the claimed method "*independently* undertake demanding tasks . . . in order to relieve host computers and personal computers" from performing those tasks. A68(col.5:38-47) (emphasis added); *see* A68(col.6:35-37) (information can be retrieved, processed, and printed "completely without the participation of a PC or other host computer to which the printer would be connected"). The Board's construction, however, does not "relieve" the attached computer of anything, as that construction allows the computer to do exactly what occurred in the prior art. *Gemalto S.A. v. HTC Corp.*, 754 F.3d 1364, 1369 (Fed. Cir. 2014) (rejecting a construction of "memory" that would claim systems using external storage, where the specification explained that "the patented invention was designed to eliminate the need for such external storage").

2.   The Board's construction renders "printer" superfluous

The Board's construction is also unreasonable because it makes the word "printer" superfluous.

First, the Board's construction ascribes no meaning to the word "printer" that is "not already implicit in the rest of the claim." *Mangosoft, Inc. v. Oracle Corp.*, 525 F.3d 1327, 1330-31 (Fed. Cir. 2008). That is legal error that makes the Board's construction unreasonable. *See supra* Part I.A.

In *Mangosoft*, for example, a claim recited a "local persistent memory device" (such as a hard disk) that was "coupled to" a computer on a network. 525 F.3d at 1330. The disputed issue was whether a "local" memory device had to be *directly* connected to a specific computer, as the district court's construction required. *Id.* at 1329. Mangosoft argued that this construction of "local" was narrower than the claims required. *Id.* at 1329-31. This Court affirmed the district court's construction, explaining that the disputed claim's "language—independent of the word 'local'—requires a connection of some sort between a computer and a hard disk. Thus, Mangosoft's proposed construction ascribes no meaning to the term 'local' not already implicit in the rest of the claim." *Id.* at 1330-31.

Because claim 20 requires a printer performing the transformation recited in claim 1, it *already* differentiates between computers and printers. A70-A71(col.10:57-62, col.11:13-15) (requiring a "printer, characterized in that it has a system for the transformation of digital print data streams," and the system "operates in accordance with the method as claimed [in] claim 1"). In addition to computer **1** (which sends the "input print data stream"), device **3** (which performs the transformation) can be either a printer or a computer, and device **3** outputs a print data stream to an output device for printing, preferably printer **9**. A65; A69-A70(col.8:57-61; col.9:9-23). Because the specification and claims already make clear that the device that performs the claimed transformation is a computer or a

printer, construing "printer" to include a computer or a printer does not give the word "printer" any independent meaning beyond what the claim already requires. "Printer" only has independent meaning is if device **3** is *itself* a "printer." A71(col.11:13-15); A65 (Fig. 1); A69-A70(col.8:55-col.9:43).

Second, the Board's construction violates the doctrine of claim differentiation. Claim 20 is based on, and narrows, claim 17. Thus, the additional limitation in claim 20 "raises a presumption that the limitation in question is not found in" claim 17. *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 910 (Fed. Cir. 2004); *see Phillips*, 415 F.3d at 1315. This presumption is particularly strong where, as here, the limitation in dispute is the only "meaningful difference" between two otherwise redundant claims. *Wenger Mfg., Inc. v. Coating Mach. Sys., Inc.*, 239 F.3d 1225, 1233 (Fed. Cir. 2001); *Tandon Corp. v. U.S. Int'l Trade Comm'n*, 831 F.2d 1017, 1023 (Fed. Cir. 1987); *Hill-Rom Servs., Inc. v. Stryker Corp.*, 755 F.3d 1367, 1374 (Fed. Cir. 2014).

Claim 17, which is narrowed by claim 20, is directed to a "system" that transforms and outputs a print data stream for printing. A70(col.10:57-62). Claim 20 narrows claim 17 by placing the transformation not just in a "system," but in a "printer." A71(col.11:13-15). Because the "printer" limitation is the only meaningful distinction between the claims, the Board's construction of "printer"— which erases this distinction—cannot be correct.

63

3.   The construction of "printer" does not turn on whether a printer can have a "single chassis"

The Board and Examiner further erred to the extent both concluded that "printer" must include a computer attached to a printer, because a "printer" might potentially include multiple parts housed in multiple physical housings. The Examiner reasoned that "[w]hether a 'printer' is housed within a common chassis or is housed external (not within a common chassis) to a linked CPU programmed with functionality is insignificant." A2405. The Board agreed that the "printer" limitation read on IBM, because the '789 patent did not "limit the recited printer to a single chassis." A16-A17. But even if some "printers" may have multiple housings (which the record does not suggest), that does not support the conclusion that "printer" should be construed to include a computer.

A "printer," as described in the patent and in the ordinary use of the word, must have printing capability. Even assuming multiple-housing "printers" were known, it is not reasonable to construe "printer" to encompass devices that are *not capable of printing*, merely because those devices could have been (hypothetically) modified to be housed in a single chassis with a printer.[11] But that is exactly what happened here: the Examiner's justification for construing "printer" to include the

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[11] The Examiner identified no multiple-housing prior art printer, and IBM's printers are consistently depicted as having a *single* housing. A230, A459, A486, A491-A492.

64

IBM AS/400 multifunction computer was that housing an AS/400 and a connected printer in one "chassis" would have been an "insignificant" modification to the prior art. A2405-A2406. The Examiner did not explain why (absent improper hindsight) such a modification would have been logical or desirable, given that the AS/400 performs many functions besides printing, and can be networked to multiple printers. But in any case, the Examiner's hindsight-driven hypothetical does not make the AS/400 disclosed in IBM, which has no printing capability, a "printer." The AS/400 is not one component of a multiple-housing "printer." Rather, the AS/400 is an independent, multifunction computer that outputs print data streams to printers. A1478 (Birnbaum); A487-A488, A491-A492.

Nor does the case the Examiner cites, *In re Larson*, support the Board's broad construction of "printer" (or the obviousness of claim 20). A2405. *In re Larson* addressed the patentability of a vehicle with a "brake drum integral with a said clamping means." 340 F.2d 965, 965 (CCPA 1965). The prior art disclosed a brake and clamp in "several parts, [that] are rigidly secured together as a single unit." *Id.* at 967. The prior art brake and clamp performed the same functions as the "integral" brake and clamp. *Id.* at 967-68. Unsurprisingly, the Court held that the "integral" brake and clamp would have been obvious. *Id.* at 968. *In re Larson* thus held that an invention was an obvious combination. It did not hold that the *scope of the claims* depended on whether it would have been possible to combine

65

prior art elements in a one-piece construction. And it did not hold that the prior art

brake and clamp *were* an "integral" clamp, because they could (hypothetically)

have been modified to be integral.

B.   Under The Correct Construction Of "Printer," IBM Does Not Teach The Claimed "Printer"

Under the correct construction of printer, IBM does not disclose the

"printer" of claim 20. IBM consistently describes the AS/400 as a separate,

distinct device from the downstream "printers" to which it is "attached" or

"connected." A487 (discussing "moving AS/400 print files to LAN-connected

printers," including "system-attached" and "network-attached" printers); A487

(depicting an AS/400 "attached" or "connected" to "printers," including "IPDS

printers" and "ASCII printers"); A488 (describing a way "to connect an AS/400 to

a printer," which can "simultaneously route printed output from several AS/400

systems to different PC-attached printers"); A491 (describing printing from a

Windows application "to an AS/400-connected IPDS printer"); A492 ("workgroup

printers" can be "simultaneously connected to multiple systems," including the

AS/400 system).[12]   And the AS/400 itself is not a printer: it has no printing functionality. A1478 (Birnbaum).

The Examiner stated that "[t]he AS/400 may *act as a printer* (as shown in IBM diagram above)." A2405 (emphasis added). But that statement finds no support in IBM. The "IBM diagram above," on which the Examiner relied, was a schematic that Samsung had modified. *Compare* A2404; A2382 (Third Party Requester Comments), *with* A492 (unmodified schematic in IBM). Specifically, Samsung enclosed the AS/400 and a connected printer in a dotted box, and labeled the dotted box "AS/400." A2404; A2382. But neither the dotted box nor the "AS/400" label appears in IBM. A492. IBM never describes the AS/400 as *including* the connected printer, as Samsung's dotted box and label suggest.

Moreover, the AS/400 cannot be the "printer" of claim 20 because it does not do the transformation required by claims 1 and 17: it does not receive an input print data stream, transform it in the claimed manner, and output a transformed print data stream to another device. A70(col.9:25-43, col.10:57-62), A65, A69-A70(col.8:57-col.9:23). The Board sustained the Examiner's conclusion that "the

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[12]   Indeed, Samsung's Request for Reexamination acknowledged the distinction between the AS/400 and the attached printers. *See, e.g.*, A742 ("IBM teaches that the AS/400 and the printers both have 'at least one communications interface'" and "both the system and the printer have a communications interface so that they can be attached to each other."). The Request did not rely on the AS/400 for the "printer" limitation in claim 20, instead arguing that the "IPDS printers [attached to the AS/400] are the printers as recited in the claim." A742, A811, A973.

IBM reference teaches an AS/400 with the system or functionality as recited in claims 17 and 1," because "[t]he AS/400 performs print data stream processing, using DDS scripts, and sends the output stream to the printer." A16-A17; A2405 (concluding that the AS/400 is "programmed with functionality that can transform digital print data streams"). But the Board and Examiner erred, because the cited portions of IBM do not "process" or "transform" an "input print data stream." As the Board explained, DDS is used to format data in order to create an output print data stream. *See supra* pp. 50-51. In contrast, the inventive method starts with an *existing* input print data stream and transforms it. This distinction matters greatly because the patent *disparages* prior art systems like IBM's, in which a computer created a print data stream, sent it to a printer, and the print data stream input to the printer could not be transformed.

Nor do the "printers" attached to the AS/400 qualify as the "printers" of claim 20. These attached printers merely receive print data streams from the AS/400; they do not then transform or output the print data stream. In other words, the cited portions of IBM do not describe any device that receives an input print data stream, transforms it, and outputs a print data stream as required by claims 1, 17, and 20—not the AS/400, not the connected printer, and not even both connected together.

68

Finally, the Interleaf references do not disclose the "printer" of claim 20, either: as the Board correctly determined, the Interleaf references do not disclose a "printer" at all. A17; A2404.

Because no prior art discloses the "printer" of claim 20, there is no basis for the rejection of that claim.

RESPONSE TO SAMSUNG'S APPEAL

Samsung appeals from the portion of the Board decision upholding claims 55 and 63, which require sending emails via a script. Samsung argues that both claims are obvious, and that claim 63 is indefinite. But these contentions were correctly rejected by the Board and are supported by substantial evidence.

I.   CLAIMS 55 AND 63 ARE NOT OBVIOUS BECAUSE THE PRIOR ART DOES NOT DISCLOSE "RECEIV[ING] E-MAILS IN THE CASES DEFINED IN THE SCRIPT"

Claims 55 and 63 depend from claims 54 and 59, respectively, and require a system or printer that can assign at least one script to at least one graphically representable object. A1332-A1333. Claims 55 and 63 additionally require the system or printer to "send and receive e-mails in the cases defined in the script." A1332-A1333. As discussed in the specification, the emails sent or received by the script can be used to automatically deliver information (such as Internet sales data) to be added to a document prior to printing. A68(col.5:11-31).

69

The Board correctly upheld these claims because the prior art did not disclose "receiv[ing] e-mails in the cases defined in the script." A19. The '705 patent was the only prior art reference that the Examiner found disclosed this limitation, and the Board correctly reversed that finding. A19.

a.   Samsung argues that the Board erred because the '705 patent, which relates to a system for archiving information to storage media like CDs, teaches "receiv[ing] an email message via a script." Samsung Br. 21-22; A2425. As the Board explained, "[t]he '705 Patent does not teach receiving an email via script; instead the cited portions of the '705 Patent describe a user emailing a document to a server and the server running scripts to parse the message and store the contents of the email to media." A19.

This conclusion is supported by substantial evidence. The '705 patent never discloses a script that receives email. Indeed, the disclosed scripts are not even activated until *after* an incoming email message has been received and stored in a folder on the server: "[T]he deposit of a message in a folder triggers the Folder : : OnMessageCreated event. As a result of the triggered event, a server-side script associated with this event is invoked . . . ." A2044(col.3:40-43); A2037 (Fig. 1). In other words, the '705 patent's scripts merely process the information in email messages that were already received.

Samsung concedes that the '705 patent's scripts are activated *after* the emails are received and stored on the archiving server. Samsung Br. 24. But Samsung contends that even so, the scripts "cause[] the stored email to be collected/received in cases defined in the script." Samsung Br. 25; *see* Samsung Br. 23 (stating that "receiving an email in cases defined in the script includes collecting an email from an archive server"). But that is not true: the '705 patent does not disclose a script that "collects" or "receives" a stored email message. The passage on which Samsung relies describes a script that "collects the *properties of the message*" already stored on the server, e.g., the message's date and sender. A2044(col.3:45-46) (emphasis added). The '705 patent does teach the use of scripts to collect, process, and use such information in various ways (e.g., "assign[ing] a unique id" to an attached document, "populat[ing] … database tables," or checking the information for completeness). A2044(col.3:45-57). But collecting, processing, and using information contained in previously received emails is not "receiv[ing] e-mails."

b.   Samsung also argues that the Board decision should be reversed because the Board erroneously construed the claims "to require that the system (claim 55) or printer (claim 63) *initiate* the email" received via the script, and that is not the broadest reasonable interpretation. Samsung Br. 23-24 (emphasis in original).

71

This argument fails because the Board decision did not construe "receive e-mails," and never stated (or even implied) that the claimed printer, system, or script was required to initiate the emails. A19.[13] The Board simply summarized the relevant portions of the '705 patent, and concluded (correctly) that the Examiner erred, because the '705 patent never describes receiving emails via a script. A19. The Board could reach no other conclusion, because *no* reasonable construction of "receive e-mails" encompasses processing information in previously received emails—and that is all the '705 patent's scripts do. *See supra* pp. 70-71. It was unnecessary for the Board to impose any "initiate" requirement in reversing the Examiner's finding.

In sum, the Board did not err with respect to claims 55 and 63. The Board did not construe "receive e-mails" to require the device to "initiate" a received email. The '705 patent does not disclose receiving emails via a script, but only processing information in emails that were already received. Accordingly, the Board's reversal of the rejections over the '705 patent should be affirmed.

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[13] To be clear, claims 55 and 63 recite a device programmed or adapted "to *send and* receive e-mails in the cases defined in the script." A1332-A1333 (emphasis added). Thus, claims 55 and 63 do require a device able to initiate or "send" emails. However, the Board never read that requirement into the "receive e-mails" limitation. A19.

72

II.   CLAIM 63 IS NOT INDEFINITE BECAUSE THE SPECIFICATION EXPRESSLY SUPPORTS THE CLAIM LANGUAGE

The Board upheld claim 63 because "Figure 1 and its supporting text describe an inventive printer that outputs a print data stream."   A8, A23. Specifically, the '789 patent's specification discloses a computer or intelligent printer (device **3**) that outputs a print data stream to a second device, which is preferably a printer (device **9**).   A8; A65 (Fig. 1); A69-A70(col.8:57-col.9:37); A69(col.8:24-25) ("The system according to the invention can also be integrated into a printer or else a printer server.").   Consistent with this disclosure, original claim 20 (which was not rejected as indefinite) recites a printer able to transform a print data stream in accordance with the method of original claim 1, which involves outputting an "output print data stream" comprising objects formatted for the control of device **9**, which is "preferably a printer."   A70-A71(col.9:25-39; col.10:57-62; col.11:13-15).   Accordingly, the Board correctly rejected the Examiner's erroneous conclusion that "the '789 specification fails to teach [a printer] '. . . wherein said printer is adapted . . . to output said combined output print data stream . . .' as found in claims 59 and 64."   A2399; A1333-A1334.

On appeal, Samsung concedes that device **3** can be "an intelligent output device such as an intelligent printer," and that device **9** is preferably a printer. A69-A70(col.8:55-61; col.9:19-23); Samsung Br. 27.   But Samsung argues that if device **3** is an intelligent printer, rather than a computer, it cannot output a print

73

data stream to device **9**: "These two embodiments are mutually exclusive so that the device **3** can **either** be 'a computer such as a PC [printer server] **or else** an intelligent output device such as an intelligent printer.' . . . Nothing in the '789 Patent teaches that the device 3 can be *both* a printer server *and* an intelligent printer." Samsung Br. 27 (emphases in original) (citation omitted). Samsung argues that this problem cannot be "negate[d]" by the description of device **3** "outputting a print data stream to a device that is 'preferably a printer 9.'" Samsung Br. 27. Thus, Samsung argues, claim 63 is unsupported by the specification and invalid as indefinite.

Samsung's argument fails because it assumes, without support, that an intelligent printer cannot output a print data stream, unless it is *also* a computer. But as the Board explained, device **3**—which outputs a print data stream—can be a computer *or* an intelligent printer. A8; A69-A70(col.8:59-col.9:34), A65 (Fig. 1). Samsung cannot point to any evidence undermining that clear disclosure. Samsung's argument that "[o]ne of ordinary skill in the art would not understand what is meant by 'a printer that outputs a printer data stream,' and, the specification does not contain any disclosure relating to this limitation," is simply incorrect: the specification discloses such a printer. Samsung Br. 26-27.

Nor does the Supreme Court's decision in *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120 (2014), alter the outcome. *Contra* Samsung Br.

26. *Nautilus* held that the legal standard for indefiniteness is not whether a claim is "insolubly ambiguous," but whether it provides "reasonable certainty" of the claim's scope. 134 S. Ct. at 2124. But the Board did not uphold claim 63 on the ground that it squeaked past the "insolubly ambiguous" threshold. The Board upheld claim 63 because it describes an embodiment expressly disclosed in the specification, and the Examiner erred in finding otherwise. A8. And in any event, *Nautilus* does not require *absolute* certainty. 134 S. Ct. at 2124. Claim 63 is not indefinite because—at a minimum—when "read in light of the specification delineating the patent," it "inform[s], with reasonable certainty, those skilled in the art about the scope of the invention," as *Nautilus* requires. *Id.*

The Board correctly reversed the Examiner's indefiniteness rejections. A8; A2399-A2400. The Board's decision should be affirmed, and claim 63 upheld.

CONCLUSION

The Court should reverse the Board's rejections of claims 1, 17, and 20. The rejections of claims 2-16, 18, 19, 21-54, 56-62, 68-71, and 76-82 also should be reversed because they incorporate the "print data stream" limitations recited in claim 1. This Court should affirm the Board's determinations that claims 55 and 63 are not obvious and that claim 63 is not indefinite.

Dated: September 2, 2014   Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that I electronically filed the foregoing with the Clerk of the

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Dated: September 2, 2014   /s/ Mehran Arjomand

CERTIFICATE OF COMPLIANCE WITH RULE 32(a)

This brief complies with the type-volume limitation of Rule 32(a) of the Federal Rules of Appellate Procedure because it contains 16,486 words.

Dated:　September 2, 2014　　　　　　　　　　/s/ Mehran Arjomand